# A World of Information at Their Fingertips: College Students' Motivations and Practices in Their Self-Determined Information Seeking

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Received: December 2, 2015 Accepted: January 9, 2016 Online Published: January 12, 2016

doi:10.5430/ijhe.v5n1p220 URL: http://dx.doi.org/10.5430/ijhe.v5n1p220

**Abstract**

People frequently engage in the process of "heutagogy" (i.e., self-determined learning). Unlike pedagogy and andragogy, heutagogy occurs without a structure or leader setting the context and directing the learning toward a specific goal. The lack of structure and the possible self-determination of topic, value, source, and trust in information led us to wonder about the motivations, goals, and processes considered by college students as they engage in self-determined learning. We conducted a survey with 83 American college students regarding their information-seeking preferences and behaviors. Some students reported accessing different media depending on what information they were seeking, while others sought multiple forms of information from the same media. Family and community influenced their trust in media, yet they also recognized experts and data as important justifications for credibility of media. We exposed some relationships among personal characteristics, perceptions of information, and self-determined learning activities. We conclude with implications and directions for future research.

**Keywords**: Self-determined learning, Heutagogy, College student learning, Information seeking

## 1. Introduction

Accessing and judging the accuracy, value, and scope of information sources is a fundamental twenty-first century skill (e.g., Common Core State Standards, National Governors Association Center for Best Practices, 2010). However, depending on the level of structure and guidance, students may not be expected to engage in independently accessing and judging information, as is commonly the case in direct instruction experiences (Knowles, 1970). In directed learning experiences, the teacher or instructor takes a major role in helping students determine the value and accuracy of information sources. Alternatively, in self-directed learning experiences, students may be guided or mentored through the process of finding and critiquing sources (Knowles, 1970). With guidance from the teacher, students engaging in self-directed learning assume a large portion of the responsibility for making decisions regarding information source, value, and accuracy, and are typically expected to consider multiple options within the confines of instructional parameters. However, with self-determined learning experiences, the responsibility of determining what source to access and the value and accuracy of the information is completely up to the student (Hase & Kenyon, 2000). When students engage in self-determined learning, they have complete control of their learning and are responsible for making decisions in terms of direction for exploration, the supporting information sources, value of the information sources, and accuracy of the accessed information.

Although self-determined learning is arguably a rather rare event in formal education (until perhaps graduate school), self-determined learning is virtually a daily event as people decide what to read, listen to, and watch; people also self-regulate their frequency, duration, and responses to their individual interactions with media and information. For example, when you read a newspaper, watch television, or surf the Internet, you are in control of what, when, why, how much, and the duration of your engagement with these sources of information: the processes of self-determined learning. Further, it is up to you to determine the value and trustworthiness of the information and how and why you respond to what you hear, read, and see. Of interest to us was what college students are doing when they engage in self-determined learning, for their self-determined practices are likely influential on their more formal educational engagement.

Through our work with college students, we have anecdotally found that they often interact with social media such as Facebook and Instagram and report information gained from these interactions as facts (regardless of accuracy). It is also through our interactions with students we have found that they often spend time browsing the Internet, watching

television, or reading without any specific goal in mind, yet through these interactions they seem to have their perceptions and conceptions altered due to information accessed during these experiences. Recognizing that access to and the number of information sources continues to dramatically increase, we were curious about the information seeking habits of college students when they engage in self-determined learning. In particular, we sought to gain a deeper understanding of what sources of information that college students interact with, the frequency of their interactions, what they seek from the sources of information, their levels of trust in the sources of information, and how they establish trust in the information sources.

In our search of the literature we were not able to locate any studies that examined the practices and perspectives of students engaging with sources of information using a self-determined process. Thus, there appears to be a gap in the literature with regards to the self-determined learning that our research addressed.

## 2. Heutagogy - Self-Determined Learning

Recognizing the similarities and differences among direct instruction (i.e., pedagogy), self-directed learning (i.e., andragogy) (Knowles, 1970), and self-determined learning, Hase and Kenyon (2000) coined the term "heutagogy." Heutagogy (i.e., self-determined learning) has foundations in a combination of constructivism, self-determination, double looping, systems thinking capability, complexity theory, and metacognition (Hase, 2011; Hase & Kenyon, 2007). Unlike pedagogy and andragogy, when people engage in heutagogy they frequently are without a structure or leader setting the context and directing the learning toward a specific goal (Hase & Kenyon, 2007). Thus, the self-determined nature of heutagogy is typified by learners determining their own goals for learning and then selecting and engaging in the tasks by which they achieve those goals (Blaschke, 2012).

Although heutagogy can be associated with a wide array of conditions or situations in which learners determine the goals and process for learning, most of the related research has focused on individuals using internet-based resources for information seeking, and on the outcomes from sharing in learning conditions that include some level of structure (Albon, 2006; Ashton & Elliott, 2007; Ashton & Newman, 2006; Blaschke & Hase, 2015; Canter, 2012; Cochran & Bateman, 2010; Cochran, Sissons, Mulrennan, & Pamatatau, 2013; Jaakkola, 2015; Louw, 2014; McLoughlin & Lee, 2007). Self-determined learning studies have explored the processes of people accessing the information they need or desire (primarily in electronic form) to solve problems or answer questions as an alternative to engaging in courses that they might perceive to be only partially relevant or interesting.

Although the process of accessing different media resources to acquire information is commonly associated with educational activities, people frequently access a variety of media sources multiple times a day as they engage in self-determined learning, with or without the explicit goal or motivation to gain knowledge (Blaschke, 2012). Thus, self-determined learning is frequently taking place outside of schools or structured education environments on a large scale, and may be motivated by a desire to learn or be entertained. However, as common as the process may be, self-determined learning has historically received little attention - perhaps because individual interaction with media for personal reasons has not been commonly recognized as a learning event, but rather entertainment (Hollander, 2005; Tsfati, Tukachinsky, & Peri, 2009).

Of interest to us were the practices students use when they engage in heutagogical activities (self-determined learning), independent of the desire to be entertained or obtain information associated with public news (e.g., economic, political, or sports), popular culture, social interactions, recreation, or other areas of personal interest. While no specific structure is expected for individually driven self-determined learning, we speculate that people are usually motivated by some purpose for their information interactions (e.g., not simply random events) and may consider a range of media sources to achieve their goals. Yet, little is known about what motivates people to choose information sources, what information they are seeking from these sources, their frequency of source access, and perceptions of the sources of information when they are engaging in self-determined learning. Our study attended to this gap in the literature and expands the knowledge and scope of self-determined learning research.

### *2.1 Accessing Media and Self-Determined Learning*

From our experience in working with students, we have also found that when they interact with sources of information they frequently do not have a specific learning goal in mind, and will engage with the media to be entertained or socially connected. We recognize these interactions with media as a form of self-determined learning, and contend that when the students engage in these processes they may consider multiple sources of information. Thus, similar to the findings of Nadelson and colleagues (2013) we maintain that when students engage in self-determined learning they may access one or multiple media information sources. Further, they may interact with these sources of information for reasons other than knowledge acquisition, and may even argue they do not learn from the interactions with the media (Nadelson et al., 2013). However, if the information they access influences their

perceptions and conceptions, then they are learning, even if their intent is to be entertained (Falk & Moussouri, 1998). It is worth noting that we did not seek to determine what students were learning in their interactions with media. Research to document student learning from self-determined activities would require imposing boundaries on the sources and content of the media which students access. These boundaries would have limited our ability to effectively document the determined activities of our participants, and this is therefore an alternative direction for future research.

For many college students, platforms such as Facebook provide a convenient method of networking friends and being informed about social events. Thomson and Lougheed (2012) report about three-quarters of college students considered themselves "heavy" Internet users, spending at least an hour per day surfing the Internet. The researchers also found about a third to half of their participants considered themselves "heavy" users of Facebook, spending more than an hour per day browsing the site. Similarly, Burgess and Kelanie (2010) found only about a quarter of college students turn to books for entertainment, while more than three-quarters spend leisure time on the Internet. In addition, the majority of college students reported multitasking between school and leisure activities while using the Internet (Mokhtari, Delello, & Reichard, 2015).

We argue that the time spent surfing the Internet and interacting with other media (e.g., perusing a newspaper or watching television) are proxies for engagement in self-determined learning, regardless of user motivation. Our position is further supported by the accessibility of news and information on social networks that is likely to influence users' perceptions and conceptions (Kwak, Lee, Park, & Moon, 2010). Thus, even if students are self-determining their Internet or media interactions with no particular goal in mind, they are likely to encounter and attend to news and other information, resulting in learning. Given the possibility that students are learning when they are engaging in self-determined activities even when their motivation is to be entertained, there is justification for exploring their practices in association with the media they access and the information they are seeking.

Coiro and Dobler (2007) found that as early as sixth grade, students engage in a series of self-regulatory processes (plan, predict, monitor, evaluate) in order to determine the usefulness of informational texts. However, little research has been conducted on the factors that might constitute the "usefulness" of such texts among college students. Through our research we sought to determine how community norms (such as political and religious values) function as motivators or guides when college students engage in self-determined learning and evaluate sources of information. We posit that students' perceptions of information sources guide their interactions with the sources and their goals for accessing the media.

*2.2 Community Norms and Trust in Information*

Community norms refer to the standard behaviors and attitudes within a community (e.g., Bartlett, 1994). Community norms can be associated with many aspects of life including religious beliefs, political structures, establishing and supporting priorities, and communication (e.g., Bucholtz, 1999). Community norms may be classified as *descriptive norms* or *injunctive norms* (Cialdini, 2003). Cialdini (2003) defines *descriptive norms* as "involving perceptions of which behaviors are typically performed" and defines *injunctive norms* as "involving perceptions of which behaviors are typically approved or disapproved" (p. 105). We contend that norms are highly influential on college students and therefore, influences on norms (e.g., family, peers, and community) should be considered when examining their self-determined learning activities.

University students' communities are complex and dynamic with norms influencing how students access, pursue, and perceive information (Altbach, Gumport, & Berdahl, 2011). College students may be members of multiple communities that are likely to have overlapping and perhaps unique sets of norms (e.g., Zimmerman, 2003). For example, students who are members of religious communities may rely on norms of church authority and doctrine (Wisneski, 2009), but the same students may not trust scientists as authorities or the accuracy of science publications (Nadelson & Hardy, 2015). Thus, there is justification for examining students' demographics as potential indicators of their self-determined information seeking activities and preferences, as personal characteristics are potential indicators of community influences on students' motivations and perceptions.

Community norms have been found to be related to the community members' conformity around how information is gathered, which information is sought, and the levels of trust in the information (Bråten, Strømsø, & Britt, 2009; Henningsen & Henningsen, 2015). In the context of information seeking, community norms are likely to influence the stereotypes associated with trusted and non-trusted information sources, the quality, value, and authenticity of information, and the motivation driving information interests and choices. Given the association between norms and information, there is again justification for examining a range of personal perceptions and preferences in relationship to self-determined information seeking.

## 3. Method

### *3.1 Goals Guiding Research Questions and Hypothesis*

Using a cross-sectional analysis of the responses of a convenience sample of undergraduate students at a public university in the rural mountain west, we sought to determine how frequently students access sources of information for self-determined purposes. We sought to establish why the students selected these sources and what information they were seeking from the sources. We also wanted to determine what sources of information the students trusted and why they trusted these sources of information. The questions that we used to guide our research were:

*How frequently do students seek information from sources in their self-determined process of learning?*

*What factors do students consider when determining the accuracy of the information that they seek?*

*What sources of information do students trust and why do they trust these sources?*

*What is the relationship between the self-determined information seeking of students and their individual characteristics?*

Given the limited research on this topic, our analyses were largely exploratory, and we did not approach the research with pre-determined hypotheses.

### *3.2 Participants*

Our 83 participants were undergraduate students enrolled in psychology courses which included a research component that could be satisfied by participating in a research project. The students who chose to participate in our research were an average age of 24.41 years (SD = 7.99), had attended 2.90 years of college (SD = 1.57), and had enrolled in an average of 2.90 science courses (SD = 1.63) and an average of 2.51 psychology courses (SD = 2.22). The participants had an average religious commitment of 7.70 (SD = 3.2) as measured on a 10-point scale, with 1 being no commitment and 10 being very committed. On a similar 10-point scale for political orientation with 1 being liberal and 10 being conservative, the participants had an average of 6.10 (SD = 2.15). The participants were 69% female, 88% Caucasian, 7% Latino/a, 2% Asian, and 3% other.

### *3.3 Measures*

We used two measures in our research, a demographics instrument and an instrument assessing the information seeking processes and perspectives of the students. We designed the demographic measure using elements from our previously designed and vetted demographics instruments. We designed our processes and perspectives of information seeking using our research questions as a guide, along with our collective knowledge of self-determined learning outside of the school environment.

#### 3.3.1 Demographics

We designed our demographics instrument to assess typical individual parameters such as age, sex, years of school, and ethnicity, as well as the level of religious commitment and political orientation items discussed previously. Our survey also included an item regarding participants' community of origin (i.e., rural, suburban, or urban).

#### 3.3.2 Processes and Perspectives of Information Seeking

Given the gap in the literature with regards to our research, it was necessary for us to develop an instrument for gathering data representative of the process and perspectives of students' self-determined information seeking. In the first iteration of our instrument development, we worked as a group brainstorming potential sources of information students would access, reasons for accessing the sources, why these sources were trusted, who influenced the trust in the sources, and a list of current hot topics that the students may seek more information about (e.g., climate change, vaccines, etc.). Following our brainstorming, we checked to make sure our groups of items were sufficiently aligned with our research questions.

In the second iteration of our survey design, we examined and adjusted our items to be relevant to college students, aligned the items with current events or popular culture, and assured that the structure and content of the items were congruent throughout the instrument. Thus, we refined our items with college students' self-determined information seeking in mind with foci on popular culture, social media, and mobile technology. We then independently reviewed each of the items and noted any potential needed or desired changes to the items.

In the third iteration, we reviewed the items as a group, again taking into consideration each individual's desired changes. Although there were few modifications in the third iteration, we did clarify the language in our survey and split a few items in two to avoid potentially double-barreled items. At the end of our third round of examination, we determined that our survey was ready for data collection.

We maintain that we were able to establish instrument face validity within the research team due to the number and diversity of members. We did not intend to measure knowledge or attitudes, but rather practices and perspectives,

which are highly individualized. The individualized nature of practices and perspectives are likely to be influenced by personal experience and priorities, which may have influenced others' perceptions of our instrument validity. Given the self-determined focus of our research, efforts to establish the validity of our instrument by others that were not part of our research team may have triggered their personal self-determined experiences and perceptions of importance, leading to modifications based on personal views rather than our research questions. Therefore, we made the decision to establish the validity within our research team.

### *3.4 Data Collection*

We ported our surveys to SurveyMonkey for web delivery. Following final adjustments to the formatting, we submitted an application to our university IRB and were authorized to conduct our research. We used an email invitation (which included a link to our survey) to provide students an overview of our research project and as a means of inviting the students in a research participant pool to participate in our research. We collected responses over six weeks, with data collection terminating at the end of the period in which the students in the research pool were to complete their research assignments.

## 4. Results

We began our analysis by conditioning our data, editing items such as age to be a quantitative value rather than string variables (e.g., changing "20 years old" to simply "20"). We examined our data for potential outliers that may have been errors in entry such as double typing of a value (e.g., for years of college being "44" rather than "4"). We also identified a few instances (less than 5% of the responses) in which individual participants did not provide answers to items, and therefore limit their contribution as useful for our analysis. Following the conditioning of our data we proceeded with the necessary analysis required to answer our research questions.

### *4.1 Frequency of Access*

Our first research question asked, *How frequently do students seek information from sources in their self-determined process of learning?* To answer this question we compiled the frequency of responses to our items associated with media access items (e.g., How often do you read a newspaper?) and our information seeking items (e.g., How often do you seek information about world events?). Our analysis revealed a nearly normal distribution of accessing a diversity of information (see Figure 1) with the largest percentage of responses being "sometimes" (a couple of times a month) and the lowest percentage nearly the same for "Never" and "Frequently" (one or more times a day). In contrast, the frequency of accessing a diversity of media was nearly consistent from "Never" through "Often" (a couple of times a week). Again, "Frequently" was the lowest rated occurrence. Our data do indicate that the participants tended to have different practices in their activities of accessing information and accessing media, with a greater frequency of accessing a diversity of information compared to accessing a diversity of media.

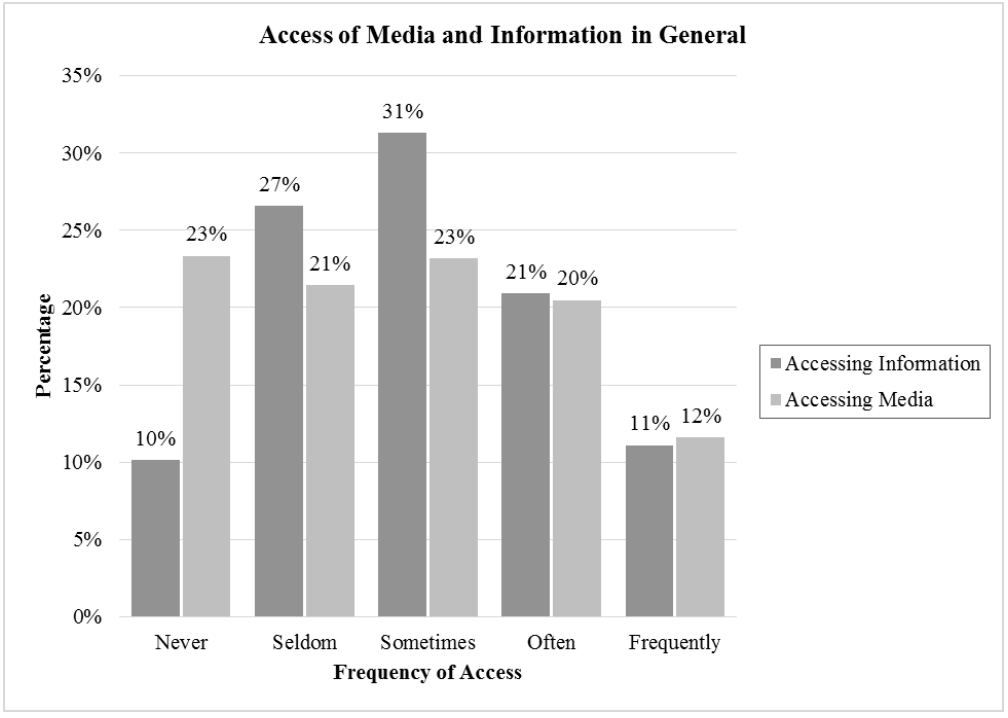


Figure 1. Distribution of information and media accessing frequencies

We next examined the frequencies with which the students accessed specific media (see Figure 2) and sought specific information (see Figure 3). We found that the most frequently accessed media were internet-based resources such as social media and Internet news feeds. Also in the most accessed category were books, which we assumed to be textbooks because of the focus on the process of seeking information. The least frequently accessed media were also Internet-based, which were listservs and Twitter. The more traditional forms of media such as television, radio, and newspaper were accessed between "Seldom" (a couple of times a year) and "Sometimes" (a couple of times a month).

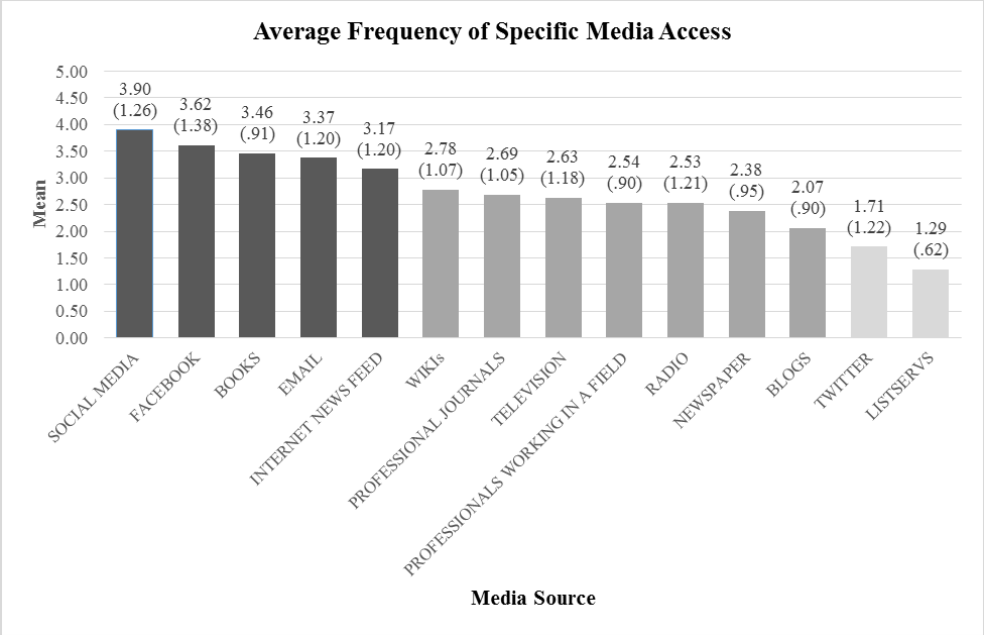


Figure 2. Average frequency of access of specific media sources

In terms of the frequency with which specific information was sought (see Figure 3), we found that news, education, lifestyle, and popular culture were accessed more frequently with access occurring somewhere between "Sometimes" (a couple of times a month) and "Often" (a couple of times a week). The least frequent information accessed was medical and political, which on average were sought "Seldom" (a couple of times a year). Somewhere between the least and most frequently accessed specific information of "Seldom" and "Sometimes" was professional (e.g., career information), sports, and financial information.

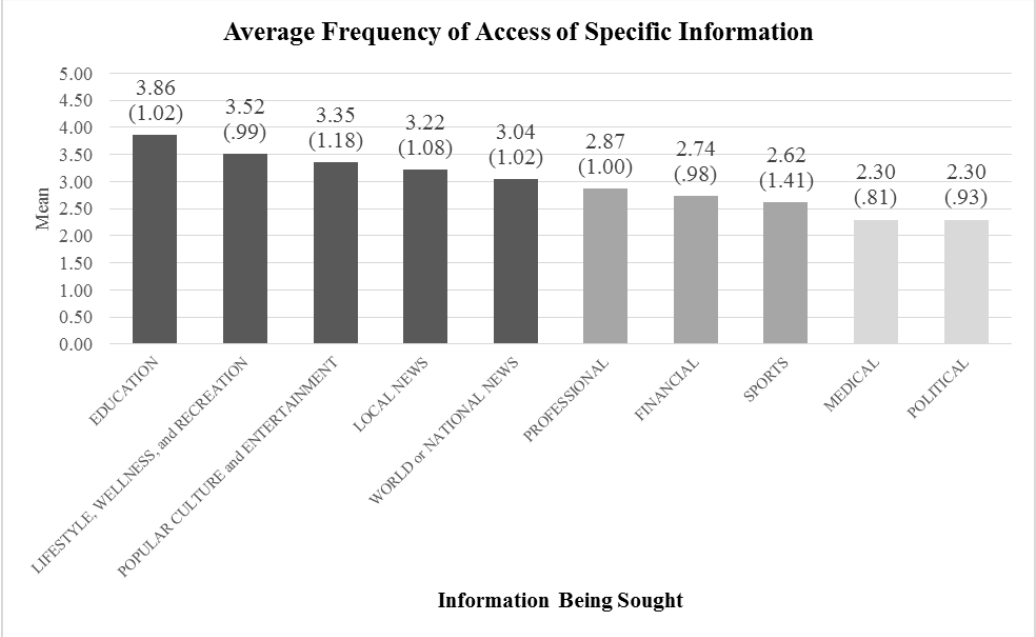


Figure 3. Average frequency of access of specific information themes

*4.2 Determining Source Accuracy*.

Our second research question asked, *What factors do students consider when determining the accuracy of the information that they seek?* To answer this question we examined the average responses (answered on a five-point Likert scale with "1" being "No Consideration" to "5" being "High Consideration") to our items that asked the participants to rate the level to which they consider different factors when determining the accuracy of sources of information. Our results revealed that the comments (M = 3.08, SD = .91) and reactions (M = 3.08, SD = 1.00) of others were considered at the lowest level when determining the accuracy of information (see Figure 4). The participants indicated that they considered the source of information (M = 4.13, SD = .67) and evidence (M = 4.16, SD = .70) the highest when determining the accuracy of information.

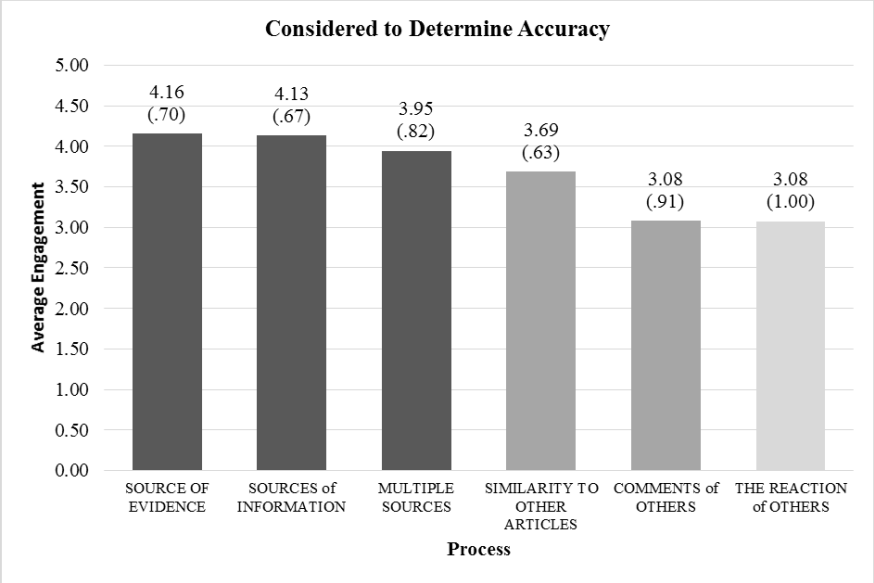


Figure 4. The average agreement of foci for considering the accuracy of sources of information

*4.3 Source Trust*

Our third research question asked, *What sources of information do students trust and why do they trust these sources?* We began answering this question by examining the average of the responses to our items focused on trust in sources of information. The items were answered on a five-point Likert like scale with "1" being "No Trust" and "5" being "Completely Trust." Our analysis revealed highest levels of trust in professional journals (M = 4.07, SD = .70), books (M = 3.92, SD = .65) and professionals in the field (M = 4.05, SD = .67). The participants indicated the lowest levels of trust in internet-based public contribution sites such as Twitter (M = 1.62, SD = .82), listservs (M = 1.97, SD = .99), Facebook (M = 2.15, SD = .80), blogs (M = 2.36, SD = .78) and social media (M = 2.39, SD = .87). More traditional sources of information such as television and radio fell in the middle of the responses to the levels of trust.

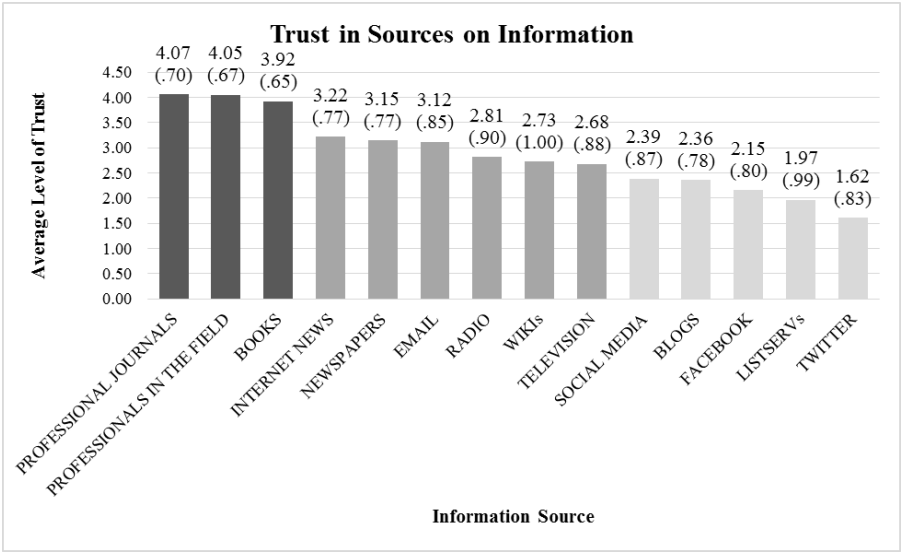


Figure 5. Average trust in different sources of information

To answer the question regarding why the students trust certain sources, we examined their responses to our questions (answered on a five-point Likert scale, from 1 "Not Important" to 5 "Very Important") regarding how important different inputs are when establishing level of trust in sources of information (see Figure 6). We found that the students relied lowest on information popularity ($M$ = 2.55, $SD$ = .99) to establish trust in a source and most on research evidence ($M$ = 4.57, $SD$ = .58) to establish trust. The students rated the importance of authority, family, and community acceptance when establishing trust in the neutral to agree range, indicating some reliance, albeit weak.

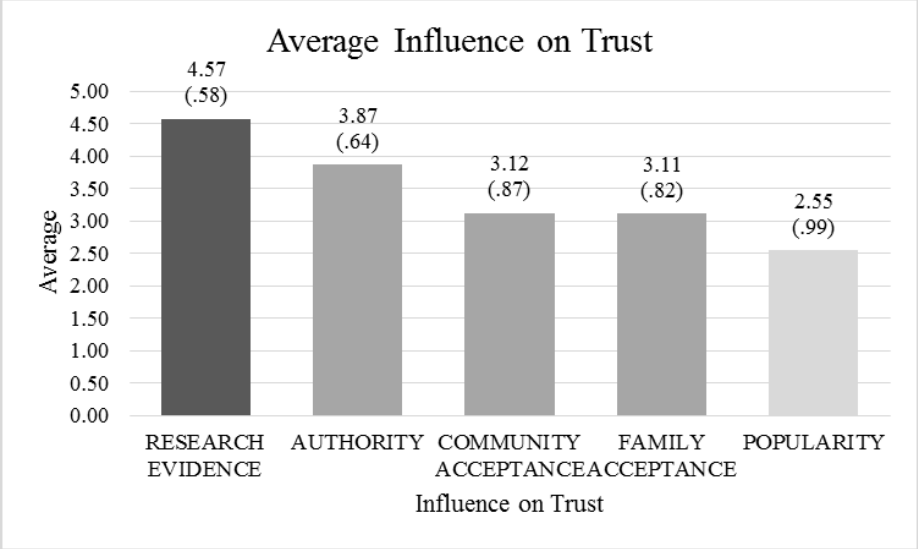


Figure 6. The average importance for establishing trust in sources of information

In our exploration of how students establish levels of trust in information, we also examined their answers to our items asking them how much they trusted different entities to provide accurate sources of information. The students rated their religious congregation ($M$ = 3.88, $SD$ = 1.07), family ($M$ = 3.76, $SD$ = .66), and professional organizations ($M$ = 3.67, $SD$ = .62) as having the highest levels of trust for providing accurate information. The participants indicated the lowest levels of trust in celebrities ($M$ = 1.93, $SD$ = .68) for providing accurate sources of information. Peers, reporters, and government agencies were rated somewhere between the highest levels of trusted entities and the lowest trusted entities (see Figure 7).

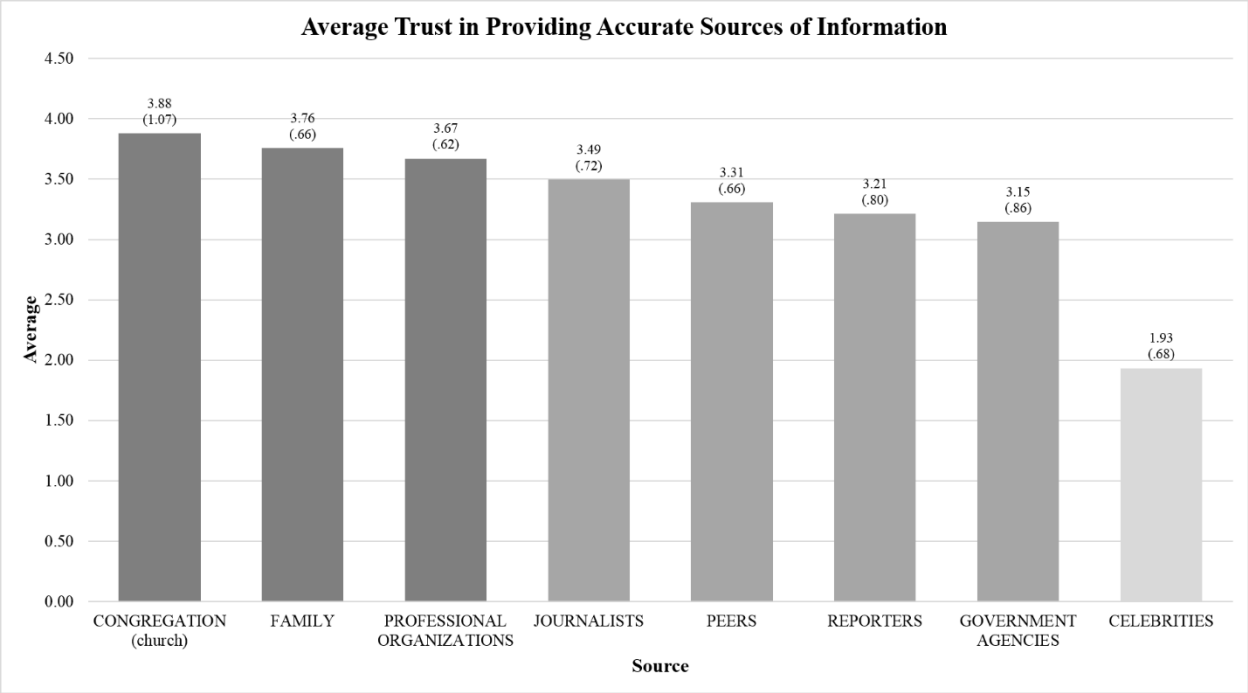


Figure 7. Responses to who provides trustful information

*4.4 Relationship to Individual Characteristics*

Our fourth research question asked, *What is the relationship between the self-determined information seeking of students and their individual characteristics?* To answer this question we examined multiple correlational calculations and exposed multiple significant relationships. For example, we found the frequency of seeking world or national news to be positively correlated with frequency of seeking information from newspapers ($r = .25$, $p < .05$), frequency of seeking information from professional journals ($r = .33$, $p < .01$), frequency of seeking information from Internet news feeds ($r = .35$, $p < .01$), and years of college ($r = .25$, $p < .05$). We found significant positive relationships between seeking popular culture information and frequency of use of Twitter ($r = .36$, $p < .01$), frequency of use of social media in general ($r = .40$, $p < .01$), and frequency of watching television ($r = .38$, $p < .01$). Similarly, we exposed several positive relationships between seeking popular culture information and trust in listservs ($r = .27$, $p < .05$), trust in Twitter ($r = .27$, $p < .05$), and trust in Internet news services ($r = .36$, $p < .01$). While additional correlation calculations would have likely exposed other relationships, our goal was to determine if there were indeed trends in the self-determined practices and personal characteristics of the participants. Our data indicate that there were relationships between the individual characteristics of the students, their perceptions of media, and their self-determined practices. Examining the depth and breadth of these relationships is an excellent direction for future research.

## 5. Discussion and Implications

Because students frequently engage in self-determined learning, it is important and useful to know more about the content they are seeking, the source of the information, the level to which they perceive the information is accurate, and why and how they established their levels of trust in the information. We surveyed a sample of undergraduate students to gain a deeper understanding of the motivations, practices, and perceptions associated with their engagement in self-determined learning. The empirical evidence we gathered may confirm common thoughts and provide new insights into students' self-determined learning activities.

Our research revealed that our participants tended to access a wide range of information sources, yet they did access some sources of information to a much higher degree than others (e.g., Facebook was accessed more frequently than Twitter). The access of a range of information sources does suggest that students are not reliant on a specific source as they engage in self-determined learning activities. However, the students seemed to have general preferences for electronic forms of media such as Facebook. We speculate that the nature of social media and other internet-based sources of information are preferred because of the control the user has over the media, and the range of ways in which information is presented (e.g., text, audio, video, photos, interactive applets). Unlike newspapers or television, which are limited to specific media formats (text and photos and audio and video, respectively), many Internet media forms allow for a great diversity of formats for information presentation. Further, Internet media also allows the users to be both consumers and producers of media, which we speculate increases their interest due to their ability to share information as well as access the content being shared by others. Finally, we posit that when students access internet-based social media they are not likely limiting themselves to a specific information foci, but rather are open to a range of content communication. A potentially interesting direction for future research on self-determined learning is students' preferred form of social media information presentation and how the preferences for the form may shift with the message or source.

In our examination of our participants' responses to how they established the accuracy of information, we found the greatest reliance on the sources of the information, evidence presented, and the use of multiple sources, and lowest reliance on the comments and reactions of others, such as peers and family. Although the participants indicated the lowest level of accuracy based on the comments and reactions of others, they are accessing social media such as Facebook, which is inundated with comments and reactions of others. Thus, there seems to be a disregard for highly accurate information in some of the most commonly accessed sources of information. The misalignment between information accuracy and accessed sources suggests that when engaging in self-determined learning, students are not necessarily seeking evidence-based communication. We speculate that the participants are likely motivated by a desire to be entertained rather than educated, engaging with the media with no particular learning goals. However, we also maintain that the information they access, whether for entertainment or to fulfill a quest for knowledge, influences their conceptions and perceptions even if the accuracy of the influencing information is anticipated to be low. A deeper examination of the influence of information in relationship to content accuracy on students' perceptions and conceptual development is a potential fruitful direction for future research.

In our examination of our participants' responses to trust in sources of information, we found several instances of negative correlations where the lowest levels of trust were associated with some of the most frequently accessed media

such as Facebook. Similarly, the students indicated that research evidence is highly important to establishing trust, but much of the information that the participants may access in their self-determined learning activities does not go through a vetting process to assure the content is evidence-based. We posit that even though students understand the importance of research evidence to determining trust in information sources in the content that they access, the evidence is trumped by popularity and community acceptance. Again, a potential issue is that students' understanding and perceptions of ideas may be influenced (in positive or negative ways) by information that is not evidence-based. The influence of high and low-trusted sources of information on conceptual development and perceptions of situations is an excellent direction for future research.

We were intrigued by how the students established trust in a source of information, and the influence of others on their levels of trust in information. While professionals in the field may effectively establish trust in sources of information, the consideration of the work of professionals may be trumped by placing a greater level of trust in the perceptions, experiences, and ideas of family and/or congregation. By placing high levels of trust in the views of family and congregation, students may substantially limit their critical consideration of information and influence their choices of information source and content focus. We speculate that students' perceptions of who provides trustful information likely constrains their consideration of a range of information sources, and limits their access to content aligned with the opinions and understanding of their families and communities. What prompts students to explore and consider opinions or ideas that are not aligned with those of their family or community is a potentially interesting direction for future research.

Our final line of analysis revealed that students tended to align the sources of the information they accessed with the content they seek. For example, students seeking popular culture content tended to access sources such as Twitter, social media, and television. We also found that those seeking popular culture content also had higher levels of trust in their source choices such as Twitter, social media, and television for providing accurate information. We speculate that students are likely to contextualize their self-determined learning activities and shift media and sources to better meet their information seeking goals. Although students may access a wide range of information sources, they are likely to change the source depending on interest as well as their corresponding levels of trust in a source. Thus, our research suggests that students are likely to experience correlations and shifts between the information source they access and trust in the source depending on the information they are seeking. The contextualization of self-determined learning, trust in information, and sources accessed is an interesting direction for future research.

## 6. Limitations

The first limitation of our study is that the participants in our research were all from the same institution and engaged in the research as part of a requirement for their psychology coursework. Thus, these students may not be representative of the general university or college student populations. Students at other institutions may have different self-determined learning perspectives and practices. However, given the rather ubiquitous presence of media in society, we speculate that our findings could be applied to a broad population of college students. We encourage others to examine the self-determined learning practices and perceptions of the students they work with to determine the alignment with our findings and also to replicate our study design with a larger, multi-institution sample.

The second limitation of our study was the nature of our data collection, which did not allow for us to ask follow-up questions to delve deeper into the responses of our participants. An interactive process of data collection would allow us to determine more about why the students answered as they did. In future research we will include interviews or focus groups to gather additional data to provide a broader understanding of students work on self-determined learning perceptions and practices.

The third limitation of our research is the dynamic nature of media. While we attempted to capture student use of common sources of information, the general classification of content and the evolution and growth of media makes it challenging to be inclusive. Again, using a combination of surveys and interviews or focus groups would provide the opportunity to include new developments and as well as to document trends within the greater student population.

## 7. Conclusion

Self-determined learning or information seeking is a common practice, yet little is known about the perceptions and practices of college students when they determine themselves the content they want to know more about and the sources they access to gain the desired knowledge. Motivated by student statements that reflected an influence from a range of information sources, and some sources that we considered to have low accuracy due to a lack of empirical base, and, therefore not trustworthy, we set out to examine students' self-determined information seeking activities.

Although we found a number of relationships to students' preferred sources of information, we also found changes in associations based on the context or content that they sought. As the amount of readily accessible information increased and access to unverified content continues to expand, there is a need to empirically document the motivations, perceptions, and practices of students as they engage in self-determined learning.

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